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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,319	02/06/2004	Andrew R. Barron	1789-12001	8538
23505	7590	11/29/2005	EXAMINER	
CONLEY ROSE, P.C. P. O. BOX 3267 HOUSTON, TX 77253-3267			LE, HOA T	
			ART UNIT	PAPER NUMBER
			1773	
DATE MAILED: 11/29/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/774,319

Applicant(s)

BARRON ET AL.

Examiner

H. T. Le

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 9-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 9-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 8, 2005.

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for at least two coating/drying cycle, does not reasonably provide enablement for one coating cycle. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. At page 6, last four lines, it's stated that: "The number of coatings is important in obtaining a structurally sound alumina sphere. It was found that three coating/drying cycles were preferred to provide an alumoxane shell with good shape retention and uniformity. If a single coating/drying cycle was used, the spheres collapsed upon firing to 1000°C." (emphases added). Based on this disclosure, a single coating/drying cycle will not yield the claimed hollow spheres. Claims 1-8, which fail to include this limitation (i.e. at least two coating/drying cycles), are therefore deemed broader than the enabling disclosure.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Matijevic patent (US 5,318,97) in view of the Jones article ("Carboxylate alumoxanes: Environmentally benign precursors for developing aluminum-based ceramic membranes and filters) or DeFriend-Varela article ("An investigation of carboxylate-alumoxanes as surface repair agents for ceramic bodies and thermal barriers for carbon composites").\*

The Matijevic patent teaches a method of making hollow spheres of alumina comprising dispersing the polymeric beads with an aqueous solution of aluminum hydroxide, drying the beads to form a coating on the polymeric beads, heating the beads to convert the aluminum hydroxide to alumina, dissolving the polymeric bead in a solvent, heating the alumina-coated polymeric beads to remove the polymeric core and obtain the hollow spheres of alumina. See col. 3, lines 1-12; col. 4, lines 36-51; col. 5, lines 34-36; col. 6, lines 52-61; and col. 19, lines 40-42. Therefore, the Matijevic patent teaches a method similar to the claimed method except that the coating material is an aluminum hydroxide (col. 19, lines 40-42) instead of the alumoxane as claimed. The Jones and DeFriend-Varela articles both

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\* Both of these articles appear on the ACS-Joint Southeast-Southwest Regional Meeting "New Chemistry for the New Century" on December 6-8, 2000.

Art Unit: 1773

teach alumoxanes as a ceramic precursor that produces high strength aluminum-based ceramic material. Therefore, it would have been obvious for one having skilled in the art to replace aluminum hydroxide coating taught by the Matijevic patent with an alumoxane in order to obtain a high strength hollow alumina spheres; especially in this case where the resulting spheres are hollow, the high strength of the shell material is significantly important.

Claim 2: The Jones and DeFriend-Varela articles both suggest a carboxylate-alumoxane, which encompasses the simplest form of carboxylate-alumoxane: acetate-alumoxane.

Claim 3: See claim 1.

Claim 4: Col. 4, lines 44-51.

Claim 5: See Table 3-1, col. 19, line 33.

Claims 6-8: The Matijevic patent teaches further incorporation of hydrolyzed complexes (col. 5, lines 16-17) which suggests doping of the coating material.

5. References not relied upon are cited as art of interest.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. T. Le whose telephone number is 571-272-1511. The examiner can normally be reached on 10:00 a.m. to 6:30 p.m., Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



H. T. Le  
Primary Examiner  
Art Unit 1773

Nov. 24, 2005